06066P USA

TREATMENT OF WATER CONTAINING ORGANIC WASTES WITH AROMATIC AMINE NITRATE SALTS

CROSS REFERENCE TO RELATED APPLICATIONS

8/9/04

This application is a continuation-in-part of US application serial number 09/813,391 filed on March 21, 2001, now U.S. Patent No. 6,379,562, issued April 30, 2002

BACKGROUND OF THE INVENTION

Wet air oxidation is a well-known treatment process for the removal of COD and BOD from industrial and municipal wastewater streams. The process involves contacting a wastewater stream with an oxidizing source, such as oxygen, ammonium nitrate or nitric acid at elevated temperatures and pressures to oxidize pollutants. Most carbonaceous material is converted to carbon dioxide. The nitrogen present either from organo-nitrogen compounds or other sources is converted to nitrogen gas.

The following references illustrate wet oxidation processes:

Proesmans, et al. (*Ind. Eng. Chem. Res.* 1997, 36 1559-1566) report on a high temperature and pressure (500°C/345 bar) hydrothermal oxidation process to remove organic compounds from a waste stream using ammonium nitrate as the oxidizing agent. In the oxidation of methanol and phenol, the authors report that unless an excess of oxidizable carbon is present, NOx in the effluent may become a problem. To avoid NOx production and reduce carbon components to carbon dioxide, a polishing step using hydrogen peroxide is suggested.

GB 1,375,259 discloses the wet oxidation of carbon and nitrogen containing materials to gaseous reaction products using HNO_3 and/or a nitrate as oxidizing agent,